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10/672,135	09/26/2003	Stephen C. Muma	22856/00302	6109

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EXAMINER
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SAYALA, CHHAYA D

ART UNIT	PAPER NUMBER
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1761

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/672,135

Applicant(s)

MUMA, STEPHEN C.

Examiner

C. SAYALA

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-16 and 19-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-16, 19-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 21-23 and 33-37 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 21 and 33 recite "humic acid". The specification supports the use of humates. The specification describes such humates in terms of their humic acid content, by stating "humic acid by weight of final product" or "humic acid equivalent". But the specification does not describe the direct use of humic acid alone. This rejection will be withdrawn upon applicant showing where this occurs in the specification.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 9-12, 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Moore (US Patent 5354350)

Moore teaches a mixture of humates and phosphates as a granular product. The amount of humate and phosphate is shown at col. 6, lines 55-60 and col. 4, lines 20+. The patent also teaches plant nutrient sources or iron in the form of MgO, MnO, ZnO, CuO, iron oxide, cobalt or calcium oxide (col. 3, lines 35-40). See claims 1-3.

3. Claims 1, 3, 7-8, 11-12, 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Robinson (US Patent 4743287).

The Robinson patent teaches combining humates with phosphates and granulating it after the addition of essential elements and trace elements in amounts as necessary or required (see col. 7, lines 25-30). The humic acid content is given at col. 10, line 49 and phosphate amounts at Table 1. See col. 6, lines 45-55 too. Although the amounts as claimed are not specifically stated as claimed, they are inherent because the humic acid content is the same. With regard to the process, the mixture is heated to a temperature shown at col. 5, line 34. See also col. 9 and example 1. Note that example 1 is to a solid fertilizer with a lab analysis given at col. 10, lines 50+, wherein plant nutrients potassium and sulfur are also included.

4. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Moore or Robinson or Karcher et al. (US Patent 311404).

Each of these patents is described at paragraphs 1, 2 and 7. This claim is written in a product-by-process format and as such, it is the novelty of the instantly claimed product that needs to be established and not that of the recited process steps. In re Brown, 173 USPQ 685 (CCPA 1972); In re Wertheim, 191 USPQ (CCPA 1976).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 4, 19, 21-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore in view of Austin et al. (US Patent 3024098) and Sakamoto et al. (US Pub. 2002/0104347).

Moore is as described above. Moore teaches 20-70% humate content in the composition. The patent does not teach the limitations of the claims herein, some of which are coating with a water-repellant or compressing the fertilizer or the process of making, etc.

The process is shown at col. 5, lines 1-12 in Moore, wherein the components are admixed and heated to the requisite temperatures. See also example 1. Note that instant claim 23 is shown at col. 6, line 62. The patent does not show compressing the

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granule or breaking the granule into the required size or coating it. Austin et al. teach that phosphate containing fertilizers can be compressed into a unitary mass of desired size, along with a binder, such as starch (see col. 3, lines 59-62). Although the patent does not teach humates, it includes another nitrogen-containing compound, urea formaldehyde, an organic fertilizer. Example 3 teaches that when this unitary mass is used, it releases slowly; whereas, if powder is used, it contributes to a quicker release. Thus, depending on the needs of the artisan, it would have been obvious to one of ordinary skill in the art to grind the unitary mass to a powder or to the desired granular size. The patent teaches suitable conditions to compress the nutrients. This disclosure renders obvious the fact the pressure and temperature during compression would have been within the realm of ordinary skill.

As for the limitation directed to coating granules, Sakamoto et al. that is also drawn to nitrogen-phosphate fertilizers, teach that such a concept was already known in the art. At paragraphs [0065] and [0068] to [0071], the reference shows granulating aids such as binders to include starch and a water repellent coating to control dissolution of the fertilizer. To enhance the product with such benefits would have been obvious to the artisan, particularly since coating granulates with wax is a common and obvious expedient in this art. Note also that Sakamoto et al. teach a number of adjustments to fertilizer compositions, such as binders and other nutrients (paragraph [0066]). As for the humic acid or humate content, it is well known that in a humate the amount of available humic acid varies depending upon the source of the humate, that the amount of humic acid in a humate can be analyzed and that Leonardite contains up

to about 80% humic acid. It would have been obvious to one of ordinary skill in the art to pick a humate that would provide a large humic acid content such as a Leonardite ore that contains a high humic acid content since it was already known in the art that humates were used as plant nutrients for their humic acid content.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moore in view of Austin et al. and further in view of Miele et al. (US Patent 6387145).

The primary references are as described above. The references do not teach the use of an inoculant with mono-potassium phosphate. However, Miele et al. teach that the addition of organisms such as the well-known and well-established rhizobia (see col. 4, line 18 and claim 6), to fertilizer composition was known and beneficial. To incorporate this, therefore, would have been obvious. Note that Miele et al. is also drawn to phosphates, and phospho-nitrogen fertilizers.

7. Claims 5-8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore in view of Austin et al. and further in view of Rogers et al. (US Patent 5256544).

Moore and Austin et al. are as described above. While Moore teaches that only water-soluble inorganic phosphates are useful in this invention, he does not teach how insoluble phosphates can be converted to the water soluble form to be made useful in Moore. Austin et al. meanwhile teach a number of phosphates at col. 3, lines 40-47, that are water-soluble, and a few, such as rock-phosphate that is not. To render it

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soluble however, was already known in the art at the time the invention was made, as Rogers et al. established in their patent. They disclose that phosphate from the ore can be solubilized by microorganisms. To use such a feature so that rock phosphate can be rendered soluble for use in the Moore invention would have been obvious.

***Claim Rejections - 35 USC § 102/Claim Rejections - 35 USC § 103***

8. Claims 1, 3, 11-12, 14-16, 21-23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Karcher et al. (US Patent 3111404).

The patent teaches a combination of humates and phosphates. Amounts are taught at col. 5, line 70 to col. 6, line 2, for instance. The fertilizer produced also contains "other plant nutrients" such as potassium @ col. 6, lines 16-17. This rejection is being made under both statutes, since the amount of phosphates is given in terms of phosphorus. Col. 3, lines 1-15 and col. 5, lines 20-25 show the process.

***Response to Arguments***

Applicant's arguments filed 2/12/2007 have been fully considered but they are not persuasive.



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With regard to the Moore reference, applicant has stated that while the instant claims recite:

the balance being selected from the group consisting of binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, and combinations thereof.

the reference does not show binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, and combinations thereof. In response, see claim 3, and also note that the patent includes iron in its humates, the iron content being given by claim 9.

With regard to Robinson, applicant states that Robinson's invention is contrasted by the instant claims reciting "a solid fertilizer composition comprising a granular admixture" with phosphates and humates or humic acid equivalents in the claimed amounts and including an element selected from the group consisting of binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, and combinations thereof. Applicant states that Robinson does not disclose such elements and that Robinson uses a process of elevating temperature and pressure to foster the bonding between plant nutrients and humic acid. This is disagreed with. At Example 1, Robinson discloses "In a first example, to produce a dry granulated fertilizer 14.0 Kg of compost was obtained..." and "The compost and 4.9 Kg (dry weight) rock phosphate were placed in the drum." At col. 2, patentee states that "Combining a treated organic waste with inorganic minerals to form a useful fertilizer is, of course, not new and an example of such application is

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shown in a patent by Wilson, U.S. Pat. No. 3,050,383. Like the present process, this treatment involves mixing of both an acid and base with an organic material sufficient to produce a granular product." Thus, the patent also adds sulfuric acid and a base to provide the other nutrients. Col. 4, lines 50-55 further discloses the addition of nutrients to this mixture. While it is common knowledge that compost contains humic acid, the analysis at example 1 also shows humic acid content. The addition of acid and base is not excluded by the claims and neither is the elevation of temperature/pressure. Furthermore, the addition of acid and base provides nutrients and this reads on the claimed invention.

With regard to claim 21, the rejection of this claim over Robinson has been withdrawn.

Applicant's traversal of the rejection of claim 37 at pages 12-13 is vigorously disagreed with. At page 12, applicant states that Karcher does not teach "pressing said admixture together". While this is not true since Karcher discloses just that at col. 5, lines 20-25, applicant must be aware of the following decisions:

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). "The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with

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evidence establishing an unobvious difference between the claimed product and the prior artproduct. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir: 1983).

At page 13 of his remarks, applicant states that Robinson does not disclose a temperature as claimed, because 280 degrees F equates to 137.78 degrees Celsius. While this is true, Robinson also shows a range of 110-280<sup>0</sup> F, and the conversion of 110 provides the <sup>0</sup> C temperature that overlaps with applicant's. In the next sentence applicant admits that the Robinson range overlaps with the claimed temperature, but now he states that the claimed range achieved "unexpected results". If the reference overlaps with the claimed range and if the claimed range obtained unexpected results, then it follows that the reference range also exhibited unexpected results. 'It is well settled that a patent cannot be properly granted for [an invention] which would flow naturally from the teaching of the prior art.' " *American Infra-Red Radiant Co. v. Lambert Indus., Inc.* , 360 F.2d 977, 986 [149 USPQ 722 (CCPA 1958)],(8th Cir.) (quoting *Application of Libby*, 255 F.2d 412 [118 USPQ 194 (CCPA 1958)], *cert. denied*, 385 U.S. 920 [ 151 USPQ 757 ] (1966).

With reference to Moore at page 13, applicant states that Moore does not show or suggest a humic acid and a phosphate source. Instead, Moore is limited to iron humate. This is not well taken. Applicant's specification fails to disclose the addition of humic acid *per se* and only adds humic acid equivalents or humates.with a humic acid content. In any event, it is well known in the art that various sources of humates have varying humic acid contents and that Leonardite or lignites have a high humic acid content and it is also known to analyze humates for its humic acid content. See the

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references cited in the accompanying PTO-form 892, as well as paragraph [0035] in the instant specification. Given such prior art knowledge, it is not convincing when applicant states that Moore does not disclose the same humic acid content and therefore, patentability must be predicated on the amount of humic acid claimed. Moore shows a composition that is in an amount 20-70% humate (col. 4, line 20), and therefore, even in the event that applicant argues that humic acid ("at least 1.5% humic acid by weight") is supported by the specification and not humic acid by weight of the final product, it is being held that the amount of iron humate shown by Moore contains "at least 1.5% humic acid by weight". The burden is being shifted to applicant to show that this is not the case. As for applicant's position that the solid fertilizer claimed should have a humate content of 70.95% (i.e. instant claim 19), this claim has been rejected under 35 USC 103 and as explained above, it is well known that in a humate the amount of available humic acid varies depending upon the source of the humate, that the amount of humic acid in a humate can be analyzed and that Leonardite contains up to about 80% humic acid. It would have been obvious to one of ordinary skill in the art to pick a humate that would provide a large humic acid content such as a Leonardite ore that contains a high humic acid content since it was already known in the art that humates were used as plant nutrients for their humic acid content.

Thus, while Moore shows the limitations of the claims 1, 3, 9-16 as discussed above, Moore does not disclose compressing granules, breaking granules, the use of an inoculant with MAP, and converting water insoluble phosphate to a soluble form. But as the secondary references show, such limitations were already being practiced with

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nitrogenous fertilizers at the time the invention was made. Applicant's traversal of the secondary references is therefore of no patentable moment, unless applicant can show he was the inventor of such techniques. One of ordinary skill in the art is held accountable not only for the specific teachings of references, but also for the inferences which those skilled in the art may reasonably be expected to draw. In re Hoeschele, 160 USPQ 809, 811, (CCPA 1969). Also see Ashland Oil Inc. v. Delta Resins and Refractories, Inc. et al. 227 USPQ 657 (CAFC 1985) wherein it was stated that "To properly combine two references to reach a conclusion of obviousness, there must be some teaching, suggestion or inference in either or both of the references, **or knowledge generally available to one of ordinary skill in the art**, which would have led one to combine the relevant teachings of the two references. (emphasis added).

In traversing the rejections in paragraphs 4-6, applicant states that Moore does not disclose a composition of 70.95% humate content. Moore shows 70% humate, and to choose a humate source that provides 0.95% more would have been obvious since it is well known that humate contents vary by source and location. Therefore, these traversals do not establish patentability.

With regard to page 17 of his remarks, applicant states that Karcher does not teach any addition of plant nutrients. This is disagreed with, because Karcher teaches such an addition at col. 6, lines 15-20 that adds potassium and sulfur, known nutrients to plants. As for monoammonium phosphate, claims 9-10 were inadvertently rejected and this has been withdrawn.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sanjay et al. in The National Energy Technology Laboratory, FETC Publications 1996 Conference, downloaded from [http://www.netl.doc.gov/publications/proceedings/96/96em/em96\\_toc.html](http://www.netl.doc.gov/publications/proceedings/96/96em/em96_toc.html), discloses in the "Approach" section that "A major source of humic acid is coal-- the most abundant and predominant product of plant residue coalification. All ranks of coal contain humic acid but lignite represents the most easily available and concentrated form of humic acid. Humic acid concentration of lignite varies from 30-90 % depending on location. Peat, humates and sewage sludge also contain significant quantities of humic acid.

Biolynceus, II downloaded from <http://biolynceus.com/Article-Whence-Come-Your-Humic-Acid.htm>, on 4/16/2007, states on page 2: "The average humic acid content varies - in weathered coal 66 percent; leonardite, up to 80 percent; carbonaceous mudstone 11 percent; and fresh coal about 10 percent."

Parent et al. (US Patent 5749934) describes the instantly claimed subject matter. See col. 4, lines 59+ in particular. However, this patent is considered cumulative in view of the references already applied.

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Trowbridge (US Patent 5451240) is being made of record because of this patent's extensive description of prior art at entire col. 1 and col. 2 at lines 1-31. Note that this patent establishes the importance of humic acids as fertilizers and that sources of significant amounts of humic acid were already known and considered useful for application in the regulation of plant growth.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. SAYALA whose telephone number is 571-272-1405.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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